

Claims

- [c1] A system for automatically operating automatic power systems of an unattended automobile comprising:
a damaging element detection sensor for detecting damaging elements contacting a surface of said automobile;
an automatic power system control unit for operating said automatic power system; and
a processor in communication with said damaging element detection sensor and said automatic power system.
- [c2] A system according to claim 1, wherein said automatic power system is one of an automatic power roof system and an automatic power windows system.
- [c3] A system according to claim 1, wherein said damaging element detection sensor is configured to provide a first damaging element detection reference signal to said processor, said first damaging element detection signal representative of a first damaging element detection level detected by said damaging element detection sensor.
- [c4] A system according to claim 3, wherein said processor is configured to receive said first damaging element detec-

tion reference signal and generate a first control signal, said processor configured to provide said first control signal to said automatic power system control unit.

- [c5] A system according to claim 4, wherein said automatic power system control unit further comprises a motor for controlling the positioning of at least one of said automatic power roof system and automatic power windows system, said automatic power system control unit further configured to provide a first motor control signal to said motor in response to said first control signal.
- [c6] A system according to claim 5, wherein said motor is bi-directional.
- [c7] A system according to claim 5, wherein said motor is responsive to adjust the position of at least one of said automatic power roof system and automatic power windows system in response to said first control signal.
- [c8] A system according to claim 5, wherein said damaging element detection sensor is further configured to provide a second damaging element detection reference signal to said processor.
- [c9] A system according to claim 8 further comprising a database in communication with said processor, said database configured to store at least one predetermined

reference signal and provide said at least one predetermined reference signal to said processor.

[c10] A system according to claim 9, further comprising a timer in communication with said processor, said timer configured to receive said first and second damaging element detection reference signals and provide a damaging element detection duration signal indicative of the time duration difference between said first and second damaging element detection reference signals.

[c11] A system according to claim 10, wherein said processor is further configured to receive said damaging element detection duration signal and compare said damaging element detection duration signal to said at least one predetermined reference signal, said at least one predetermined reference signal being a damaging element detection duration data stored in said database, said damaging element detection duration data representative of the duration during which no damaging element detection is detected by said damaging element detection sensor.

[c12] A system according to claim 11, wherein said processor is configured to provide a second control signal in response to said comparison of said damaging element detection duration signal and said predetermined dam-

aging element detection duration data.

- [c13] A system according to claim 12, wherein said processor is configured to provide said second control signal to said automatic power system control unit, said automatic power system control unit further configured to provide a second motor control signal to said motor in response to said second control signal, said motor configured to control the positioning of said at least one of said automatic power roof system and automatic power windows system in response to said second motor control signal.
- [c14] A system according to claim 5, further comprising an occupant sensor, said occupant sensor configured to provide a first occupant present signal to said processor, said first occupant present signal indicative of an occupant being in a cockpit of said automobile.
- [c15] A system according to claim 14, wherein said occupant sensor is one of a motion sensor and a pressure sensor.
- [c16] A system according to claim 14, wherein said processor is configured to provide a first occupant present control signal to said automatic power system control unit in response to said first occupant present signal, said automatic power system control unit further configured to provide a motor cease operation signal to said motor in

response to said first occupant present control signal, said motor configured to control the positioning of said at least one of said automatic power roof system and automatic power windows system in response to said first occupant present signal.

[c17] A system according to claim 16, wherein said occupant sensor is configured to provide a second occupant present signal to said processor, said second occupant present signal indicative of an occupant being in the cockpit of said automobile.

[c18] A system according to claim 17, further comprising a timer in communication with said processor, said timer configured to receive said first and second occupant present signals from said processor, said timer configured to provide an occupant present reference signal to said processor.

[c19] A system according to claim 18, wherein said processor is further configured to receive said occupant present reference signal and compare said occupant present reference signal to said at least one predetermined reference signal, said at least one predetermined reference signal being a predetermined occupant present reference data stored in said database, said predetermined occupant present reference data representative of the dura-

tion during which no occupant is detected in said cockpit by said occupant detection sensor.

[c20] A system according to claim 19, wherein said processor is configured to provide an occupant present control signal in response to said comparison of said occupant present reference signal to said at least one predetermined reference signal.

[c21] A system according to claim 20, wherein said processor is configured to provide said occupant present control signal to said automatic power system control unit, said automatic power system control unit further configured to provide an occupant motor control signal to said motor in response to said second occupant present control signal, said motor configured to control the positioning of said at least one of said automatic power roof system and automatic power windows system in response to said second occupant present control signal.

[c22] A system according to claim 5, further comprising an obstruction sensor, said obstruction sensor configured to provide a first obstruction present signal to said processor, said first obstruction present signal indicative of an obstruction impeding the operation of said automatic power system.

[c23] A system according to claim 22, wherein said obstruction sensor is one of a power level sensor, an angular position sensor and, a rotation sensor.

[c24] A system according to claim 22, wherein said processor is configured to provide a first obstruction present control signal to said automatic power system control unit in response to said first obstruction present signal, said automatic power system control unit further configured to provide a motor cease operation signal to said motor in response to said first obstruction present control signal, said motor configured to control the positioning of said at least one of said automatic power roof system and automatic power windows system in response to said first obstruction present signal.

[c25] A method for automatically operating automatic power systems of an unattended automobile, said method comprising:
providing a damaging element detection sensor for detecting damaging element detection contacting an automobile surface, the damaging element detection sensor for providing a damaging element detection detected signal indicative of the level of the damaging element detection detected; and
providing a power control system configured to receive the damaging element detection signal, the power con-

trol system configured to automatically operate at least one of an automatic power windows or automatic power roof, the power control system operating the at least one of an automatic power windows or automatic power roof in response to said damaging element detection detected signal.

- [c26] A method according to claim 25 further comprising: providing a timer for providing a damaging element detection timing signal representative of the time duration during which no damaging element detection is detected by the damaging element detection sensor; and providing a database for storing at least one predetermined timing reference data.
- [c27] A method according to claim 26 further comprising providing a processor for comparing the damaging element detection timing signal to at least one of said predetermined timing reference data, the processor configured to provide a control signal to the power control system.
- [c28] A method according to claim 25 further comprising providing an obstruction sensor for detecting an obstruction impeding the operation of the power control system and sending an obstruction signal indicative of the obstruction to the processor.

- [c29] A method according to claim 25 further comprising providing an occupant sensor for detecting an occupant in the cockpit of the automobile and sending an occupant present signal indicative of an occupant present in the cockpit to the processor.
- [c30] A method for automatically operating automatic power systems of an unattended automobile, said method comprising:
providing a damaging element detection system sensor for detecting damaging element detection contacting an automobile surface and providing a damaging element detection signal; and
operating a power control system in accordance with a damaging element detection signal the power control system configured to automatically operate at least one of an automatic power windows or automatic power roof, the power control system operating the at least one of an automatic power windows or automatic power roof in response to said damaging element detection detected signal.
- [c31] A method according to claim 30 further comprising providing an in-operation indicator for providing notice of the operation of the power control system, wherein the in-operation indicator provides at least one of audible and visual notification.

- [c32] A method according to claim 31 further comprising providing notice of power control system operation at predetermined intervals.
- [c33] A method according to claim 31 further comprising providing notification intermittently.
- [c34] A system according to claim 1 further comprising an in-operation indicator for providing notification of automatic power system operation.
- [c35] A system according to claim 34, wherein said notification is one of an audible notification and a visual notification.
- [c36] A system according to claim 34 wherein said notification is provided at predetermined intervals.
- [c37] A system according to claim 34, wherein said notification is provided intermittently.
- [c38] A system according to claim 34, wherein said in-operation indicator comprises at least one of an automobile lighting system, automobile horn, and automobile alarm system.